CLINICAL OBSERVATIONS ON CONTAGIOUS IMPETIGO.

Remarks before the New York Dermatological Society, September, 1871, by R. W. Taylor, M.D., New York, Surgeon to the New York Dispensary, Department of Venereal and Skin Diseases.

Mr. President and Gentlemen,—I have been very much interested during the summer in the observation of a series of cases which presented peculiar lesions, and which, I am convinced, belong to that variety of pustular diseases which that accurate observer and accomplished dermatologist, Dr. Tilbury Fox, has named *impetigo contagiosa*. I had read the description of this disease by Dr. Fox, and I was anxious to have the opportunity of observing some cases of it. You are undoubtedly aware that the opinions of prominent dermatologists are not definitely settled as to the existence of this disease as one *sui generis*, and therefore any observations upon the subject possess a certain amount of interest. I think that a study of the various cases which I have seen will fully show the nature and features of the disease.

A woman brought two of her children to the College clinic in July of this year. She said that her oldest daughter, who was 4 years of age, had contracted an eruption from a child at school, but that the rash was on the face of her child while that on the other child was on the hands. Upon examination, I found several patches of erythematous integument around the mouth and upon the child's chin. These patches were of different shapes and sizes; some were round and others irregular and gyrate, as if formed by the fusion of several round patches, and they varied in size from two lines to an inch in diameter. Besides these erythematous patches, there were some peculiar yellow-colored crusts, which were elevated above the integument, and appeared, as described by Fox, as if "stuck on." Some of them adhered very closely, while others had begun to separate at their margin and could be quite easily detached, and under them was seen the erythema above described. These crusts were of a light straw-color, and of the thickness of blotting paper; were somewhat laminated in appearance, and seemed composed of epidermis and dried pus. The more recent ones were slightly darker and less dry and adhered closely. These crusts differed in color and consistence from those of eczema. Upon this child these were the only conditions of the lesion to be observed, consequently its initial stage was wanting. Now, in order to prove that the disease is one *sui generis*, I think it is well to study each of its stages carefully, and I think there are certain features in its erythematous or declining stage, which I have just described, which clearly indicate that it is not an eczema. These erythematous spots, when first observed after the fall of the crusts, presented a bright-red color, there was a very slight desquamating fringe around them, but upon their surface there was no tendency to desquamation, nor was there any punctate redness; in fact, the peculiar appearance of an immature and tender epidermis as seen after eczema was not observed here, but there was a new epidermis of considerable solidity, with no subjacent infiltration whatever. This erythema rapidly paled, becoming at first more dusky, and when it had disappeared there was no trace of previous inflammation. This eruption had begun about the middle of June, and about the first of July the mother noticed it upon the younger daughter, who was four months old. In the older child there was no perceptible febrile movement either before or during the evolution of the rash; but the younger child was noticed to have a well-marked fever, which came on three days before the rash appeared and ceased on the day following its evolution. Now, upon this second child I could study the initial stage of the lesion, as well as its later stages. The mouth was surrounded by crusts, which only differed from those of the first case in the fact that they had not

gone on to such thorough desiccation ; but on the shoulders I could observe large and small vesicles, which exactly corresponded with crusts upon the under surface of the jaw, and I think were due to contagion from their secretion. The child's neck was fat and chubby, and its chin nearly rested upon the shoulders, hence the facility to contagion. Now the appearance of these vesicles was very characteristic. Their enveloping capsule of epidermis was very thin, which rendered it easy to see that their contents were sero-purulent, as they were of a milky rather than a yellow color, hence I think that the serous element predominated over the corpuscular element; in fact, the fluid seemed to be one stage further advanced in point of its corpuscular character than the recent serum of pemphigus, and not so far advanced as the pus of eczema impetiginodes. The shape of the vesicles was distinctly acuminate, and they were seated upon an erythematous base, which was not at all elevated. At their commencement, they were of about the size of a small miliary papule, and they showed no tendency to umbilication. Their course, as seen in this and other cases, seemed to be as follows: the vesicle enlarges at its periphery, but does not become elevated in the manner that a pemphigoidal bulla does; on the contrary, it gradually flattens itself out, becoming, in some instances, decidedly umbilicated, and at its maturity, when it may be of a diameter of from less than one line to an inch, and when many may have coalesced forming gyrate patches, it consists of a capsule of epidermis enclosing a sero-purulent fluid, which, in the process of maturation of the vesicle, becomes more corpuscular in character and consequently more yellow and dark. The further process in the formation of the crust consists in the gradual desiccation of the fluid until it assumes a considerable consistency, and then is no longer capable of separation from its epidermal envelope, but constitutes the peculiar yellow or straw-colored laminated crusts, seated above the level of the integument, and appearing as if stuck on. This process takes about six days. There are other changes in the development of this vesicle which are readily observed and which, I think, are of considerable clinical importance. I just now stated that there was an erythema surrrounding each vesicle. This is usually of a line or less in extent around the whole vesicle. Now, then, as the vesicle enlarges circumferentially, this erythema seems to disappear until, finally, at the complete development of the vesicle, there is scarcely any erythema to be observed, showing, I think, that the processes are distinctly limited, as a rule, in their extent. Now, as I said before, there is no resemblance, whatever, in this enlarged vesicle to the appearance of a bulla ; the nearest simile with which I can compare it is a typical vaccinial vesicle, or, again, to that rare form of herpes described by the French as *hydroa bullosum*. Its elevation is never great, generally about one-third or one-quarter of a line, and it is interesting to observe how rapidly this expanded vesicle developes into a typical crust. The umbilication is not absolutely constant, nor is it so well marked as in the vaccinial vesicle ; this may be accounted for, however, by the fact that it is less elevated than the latter. This, I think, gives a clear clinical history of this affection, and I think that we shall see that it has features peculiar to it as well as a demonstrable anatomical lesion, which differs in its course from that of similar lesions in other diseases. I might add in this connection that the mother had a similar vesicle upon one phalanx of a finger, and that it resembled a burn very closely and ran the same course as did the other vesicles, except that in this instance there was rather more erythema around it than is observed where the vesicles are situated elsewhere upon the body. So that while I think that usually the circumferential erythema declines to a great extent in some cases, and that this feature is of diagnostic importance, it may continue, in some cases, to surround the crust. I shall speak on this point a little further on. Besides the mother, a third child was similarly attacked and the lesion ran a similar course. Now in the observation of two other series of cases I saw that there were accidental complications which may arise in the course of the disease. I saw a child upon whose forearm these typical crusts were seen quite copiously distributed over its outer and inner aspect, and between them there was considerable hyperæmia, with some œdema. As I was then familiar with the disease, I at once saw that it was not an impetiginous eczema, but the fact struck me very forcibly that it would have, under other circumstances, escaped recognition, and have been classed as an eczema impetiginodes. Now I think that it will not be a waste of time to describe the appearances presented by this case, as they are somewhat unusual to the course of the disease. The crusts were, as I have said, quite copiously distributed, and in all stages of de-

velopment, some presenting the appearance of an expanded vesicle, the contents of which were becoming inspissated, others of the typical straw color and stuck-on appearance, and more or less adherent, and when elevated by the finger-nail, presented the erythematous surface already described. Between these crusts was a slightly œdematous hyperæmic integument. Upon the margin of this hyperæmic patch the typical vesicles were to be observed. Now the involution of this rash showed very plainly that it was not an eczema, because it took place as follows: The erythema between the crusts rapidly disappeared when the crusts had become dry and fell off, and when the crusts had fallen was no longer noticeable, and was, in fact, a perfectly sound integument. But the erythematous surfaces upon which the crusts had been situated remained over a week and disappeared gradually as in the other cases. So I think that, upon some integuments, a hyperæmia of considerable degree may be produced, and is, perhaps, accounted for by the peculiar irritability of the integument of the patient. I have observed this, also, upon the face of another child, and I think it is a fact which it is important to know. Then, again, in another case, I saw that a typical acute eczema was induced, and that by it the features of impetigo contagiosa were so thoroughly ~~marked~~ that I should not have recognized it had not I seen its development; but on looking at the abdomen and the legs, I saw the typical new vesicles appearing, and this settled the diagnosis. Then, again, when this lesion is developed in the hairy scalp, the crusts are not by any means typical, but resemble very much those of eczema impetiginodes, and would certainly pass for those of that disease were not the diagnostic features of contagious impetigo seen elsewhere upon the body.

Then, again, there is another feature which struck me as being unusual in this disease, and that is a slight ulceration under the crusts. You will remember that I said that in the first cases when the crusts were elevated a bright shining integument was seen; but in two cases, I observed that when I elevated the crusts I exposed an epidermis covered with a light-colored viscid secretion. This, I suppose, is also due to the greater susceptibility of the integument to the irritant action of the disease.

From what I have seen of this disease, I am inclined to think that itching is not a prominent feature of it, as I saw very little of the results of scratching, which would certainly be observed if the rash itched. But in one case, it having occurred around the mouth, it did itch slightly, and then, in consequence of scratching, the features of the disease were obliterated. I am convinced that it is an inflammation of the superficial portions of the derma, for after its retrocession it seems that only a few layers of the epidermis have been thrown off, and that reparative action is rapidly established. Then, again, there usually seems to be no tendency of the patches to ulcerate either in extent or depth, nor is there a tendency to the production of large quantities of pus. In fact, it strikes me as being a skin disease, self-limited in its duration, leaving the integument in a healthy state, without any thickening, hyperæmia or desquamation. As regards its duration, I think that an average may be stated at from ten to fourteen days before all traces have disappeared. In its evolution it may appear in several successive crops of greater or less abundance, and may thus occupy a longer period of time, but we shall see that remedies have a decided effect upon its duration. It seems to be developed on all parts of the body, upon the face more particularly, and also on the scalp and upon the posterior aspect of the neck; it is most sparsely distributed upon the trunk, and is about equally distributed upon the legs and arms. I have not seen it, as stated by Fox, situated around the vaccination cicatrix. I am unable to state positively in regard to the more or less constant occurrence of a prodromal fever, but from the cases which I have seen, in all about twelve, I think that the fever is greatest in quite young children and becomes less severe in those older. I have no doubt, also, that the extent of the rash has a qualifying influence upon its intensity.

Now, then, we come to the important question of the contagiousness of this rash. The clinical facts observed in my cases certainly favored the view of a contagious element, and such was the opinion of the mothers of the children. It certainly is singular that the same rash appeared in one child after another, and in each ran a similar course. Now, then, to satisfy myself as much as possible, I scarified very slightly and without producing blood the integument upon the arm of a young physician, and laid upon it a portion of one of these crusts slightly moistened, and retained it there by plaster. Very soon an itching was noticed, an inflammatory action was set up and a crust similar to the other crusts was formed, and when it fell off the pecu-

liar erythematous surface remained. I am not absolutely positive, though I lean to the opinion of its contagious character, and I have been struck with the features in which it resembled the exanthemata, namely, in the critical fever and definite period of duration. My friend Dr. F. P. Foster, who saw some of the cases, suggested to me that perhaps it was a modified varicella.

The clinical description of this disease seems as follows: isolated vesicles sparsely scattered appear upon the face, head, arms, body and legs; they are at first surrounded by slight erythema, which, when they become enlarged and flat, disappears. This large, flat vesicle soon becomes a thin, yellow-colored, elevated crust, which may remain of its original size; or if perchance several vesicles are developed close together may coalesce and form a patch. In the course of a few days the crusts dry and fall off, and then we have the typical erythematous surface. The exceptions to this course have been alluded to above. The disease may manifest itself by one crop of vesicles or by successive crops, each crop lasting, in an uncomplicated case, about ten or twelve days. It occurs mostly among the poorer classes; and of the cases seen by me some were dirty and ill cared for, others were scrupulously clean. The diagnostic features are—the *isolation of the vesicles, their peculiar course, the appearance of the crusts, the erythematous surface and the limited duration of the whole eruption.*

The diseases with which the one under consideration might be confounded are—eczema impetiginodes, scabies in its pustular form, pemphigus and varicella. I have already called attention to the differences between it and eczema. As to scabies, it is so rarely wholly pustular, it has its well-marked sites of election, and generally is attended with papules and very often with the diagnostic acarian furrow and its peculiar itching, that I think no one can possibly confound the two diseases. In pemphigus the bullæ are prominent and the initial lesion is never by a vesiculo-pustule, and its contents, at least early in its history, are not so purulent in character, and the crusts are wholly different. In varicella the pustules rapidly desiccate and show no tendency to enlarge and cover so great an area as the crusts of impetigo contagiosa usually do; besides this, the crusts of varicella are more conical and of a dark color, and under them we find more loss of tissue. Thus, gentlemen, I think we are warranted in accepting this disease, as claimed by Dr. Fox, as one *sui generis*, and if we are not willing to wholly acquiesce to its truly contagious character, we must admit that it has its peculiar lesion which runs a peculiar course.

As to treatment, in the cases in which I observed a febrile movement I, from routine, gave quinine, and I think it did some good; but I am certain that topical treatment aborted the development of the vesicles. When I prescribed for the first case, I could not recall to mind the ointment so strongly recommended by Dr. Fox, so I ordered the application of benzoated zinc ointment, and it answered my purpose admirably. It caused the crusts to fall rapidly and the erythema to disappear likewise, and when applied to vesicles just commencing, and to others more fully developed, it caused them to rapidly wither, and this is certainly a very great desideratum, as it relieves the patient and renders others less liable to contagion; for although we have suggested that perhaps there was an exanthematic element in the case, under which circumstance contagion would be only an epiphenomenon, we certainly must admit that the pus of this disease, when planted upon a healthy integument, produces similar changes to those produced upon the integument of the person who furnished it.*

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* Since writing the above, I find that Dr. Moritz Kohn, of Vienna, admits the existence of the disease, and that he states that he has discovered a parasite in it. I carefully examined the recent pus from a pustule of one of my cases as well as a small portion of dried crusts, but was unable, even with the aid of high powers, to find any appearance of a fungus. The whole field was occupied by pus corpuscles, granular *débris* and epithelial scales in various stages of development.
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